Agenda Item No. 10

Meeting of The Reclamation Board
June 15, 2007

Reclamation Board Staff Report

Item

Consider request to modify a short reach of the right (north) bank boundary of the Mokelumne River Designated Floodway in San Joaquin County.

Requestor

Dr. Steve E. West, DDS
22221 Bender Road
Acampo, California

Location

The site of the requested modification to the designated floodway boundary is located in San Joaquin County at 22221 Bender Road, Acampo, California, along the right (north) bank of the Mokelumne River approximately 3 miles west of Highway 99 along County Road J12 (Peltier Road). The designated floodway reach proposed for modification is approximately 2000 feet long and is located immediately upstream (south) of the Peltier Road bridge. A location map is provided for reference (Attachment A).

Authority

The Board's designated floodway program is authorized by Water Code Section 8609. Part (a) states:

> *The Board may designate floodways throughout the Sacramento and San Joaquin Rivers drainage to control encroachments in, and to preserve the flow regimens of, floodways for the purpose of protecting public improvements, lives, land use values, and improvements created in reliance upon historical flooding patterns.*

The Board's regulations (Title 23, Article 5, Section 106) provides for the Board to make modifications to the boundaries of a designated floodway after adoption. Section 106 states:

> *If, after the adoption of the designated floodway and floodway encroachment lines, the board determines that conditions have changed sufficiently to necessitate altering the lines, the board*

may, at any regularly noticed meeting, make modifications to the designated floodway as it deems to be appropriate.

Background

Dr. West submitted Application No. 18176 on January 25, 2007, to construct a 6200-square-foot residence within the designated floodway. During the application process, Dr. West was informed that a variance from the Board would be required to construct the residence within the designated floodway. After several meetings, including a field visit to the proposed site, representatives for Dr. West were notified that Board staff would recommend the Board not approve a variance for construction of a house within the designated floodway. Staff has been very consistent with regard to the Mokelumne River designated floodway in recommending that requests for residential encroachments be denied by the Board so that an undesirable precedent would not be established for residential encroachments in an area that is currently becoming more urbanized through the conversion of agricultural lands to semi-rural urban properties.

During further discussions, representatives for Dr. West were informed a request to modify the designated floodway boundary could be presented to the Board for consideration if there was justification for altering the floodway boundary. If the floodway boundary is altered as requested, the residence would be constructed on land located outside the revised designated floodway and, therefore, a variance would not be required.

A request for modification to the designated floodway line along Dr. West's property at 22221 Bender Road, Acampo, California, made on behalf of Dr. West by Peterson, Brustad, Pivetti, Inc., was received via e-mail on May 16, 2007 (Attachment B). The request is to modify the existing designated floodway line to conform to the FEMA 100-year floodplain boundary as shown on the 1988 Flood Insurance Rate Map (FIRM) (Attachment C). Reasons justifying the request for modification submitted with the request are presented below with Board staff comments following each reason.

1. FEMA's FIRMs for the Mokelumne River were last updated in 1988; 13 years after the Reclamation Board's Designated Floodway Maps were drawn.

   The above dates are correct. The Board's Mokelumne River designated flood map was adopted January 24, 1975 and the FEMA FIRM for the proposed site was revised July 4, 1988, approximately 8½ years later.

2. FEMA's boundary is based on a 15,400 cfs peak discharge for the 100-year flood event on the Mokelumne River at Peltier Road, which is more than 80% larger than the 8,500 cfs used to draw the Reclamation Board's

Designated Floodway Map. In addition, FEMA's water surface profiles and FIRMs were computed based on detailed studies while approximate methods were used for the Reclamation Board's Designated Floodway.

The FEMA 100-year flow of 15,400 cfs at Peltier Road is significantly larger than the 8,500 cfs 100-year Mokelumne River designated floodway flow used by the Board. Computation of the 100-year FEMA flow of 15,400 cfs does not appear to include data from the significant 1997 flood. Recalculating the 100-year flow with 1997 data included may increase the flow to more than 15,400 cfs currently being used. The Board's designated floodway computations did not use approximate methods for this reach of the Mokelumne River, located downstream of Highway 99, as stated. The Board's studies for the reach downstream of highway 99 were based on photographic evidence of previous floods, channel capacity studies, and development of water surface profiles, that is, detailed studies were made. Channel cross-sections were not obtained by field measurements.

3. The Reclamation Board Designated Floodway does not adhere to topographic features on the property, reinforcing the notion that the boundary was drawn using approximate methods, and was not likely field verified at this particular site.

   The flat topography of the overbank area at the location of the proposed floodway line relocation would not show on the typical USGS 7½ minute quadrangle map with a minimum contour interval of 5 feet. Since neither FEMA nor Board floodway lines were field verified, errors in defining the boundary by either entity could be expected.

4. Topography of the owner's property, surveyed and drawn to a scale of 1"= 20', indicates the owner's proposed home site is higher in elevation than FEMA's computed 100-year flood elevation of 34.2 feet. The topographic survey, completed in 1987, shows the ground surface elevation between the proposed home site and the Mokelumne River is between 34.6 and 35.2 feet in elevation. This confirms the accuracy of the 100-year flood boundary as drawn on the FIRM.

   Although the more recent topographic survey performed for Dr. West is not representative of the level of data used for the FEMA study, the recent data does show the proposed location of the residence to be higher than the 100-year flood elevation computed by FEMA at this location.

5. The owner proposes to construct the house with the lowest finished floor of the home at elevation 38 feet NGVD, which is 0.2 feet higher than FEMA's 500-year water surface elevation of 37.8 feet and 3.8 feet higher than FEMA's 100-year water surface elevation of 34.2 feet. This elevated construction would minimize potential flood damage should a 500-year

flood event occur on the Mokelumne River. The home would be constructed on a raised footing, with no below-grade excavations such as a swimming pool.

This is presumed to be true but recalculation of flood-flow frequency values that include recent flow information such as the 1997 flood may cause increases to the flows and associated water surface elevations.

Issues

1. The current request for modification of the floodway boundary will move the boundary closer to the river channel, causing the designated floodway area to decrease and reducing any inherent factor of safety provided by a conservative estimate of the boundary location.
2. As discussed above, computation of the FEMA 100-year flow does not appear to include data for recent hydrologic events. The data used in the 1985 Flood Insurance Study used to generate the 1988 FIRM did not include data after 1985 and the most significant recent event, the1997 flood, may be expected to cause the 100-year flow and associated water surface elevation to increase, which may flood more area than currently shown on the FIRM.
3. There is significant staff work associated with approval of a designated modification. Affected map sheets must be revised and renumbered, the revised maps sent to San Joaquin County recorders office as an official document, and the Board's records and website updated.
4. Areas adjacent to the Mokelumne River downstream of Comanche Dam, especially the areas accessible from major transportation routes such as Highway 99 or Interstate 5, are currently experiencing urbanization.

Staff Recommendation

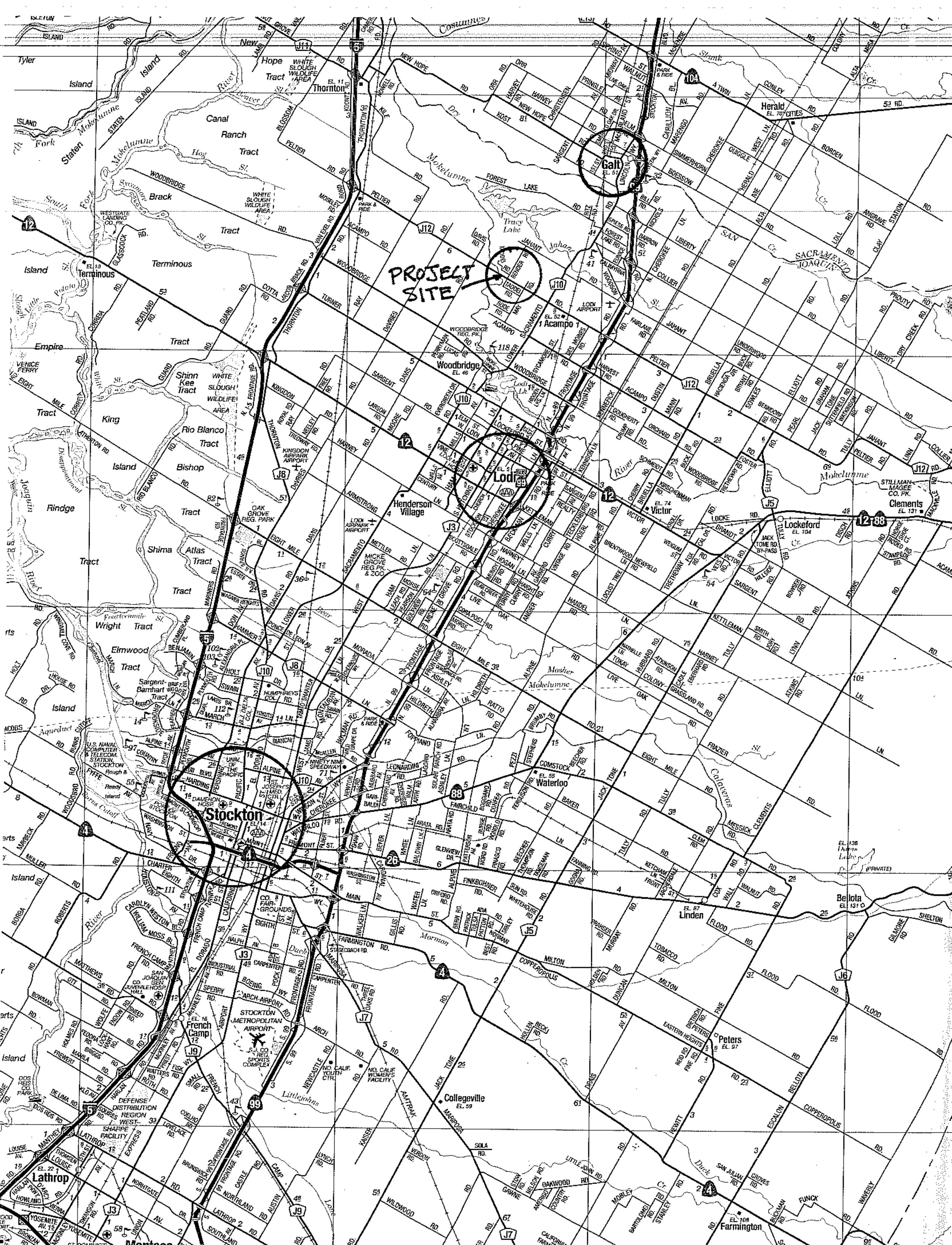
Staff recommends denial of the request to modify the boundary of the right bank of the Mokelumne River Designated Floodway that would decrease the floodplain area of the designated floodway.

ATTACHMENTS

A) Project Location Map
B) Request for Modification
C) Flood Insurance Rate Map

Attachment A

Project Location Map



PROJECT SITE
Galt
Herald
Thornton
New Hope Tract
Canal Ranch Tract
Brack Tract
Terminous
Terminous Tract
Empire Tract
King Island
Shinn Kee Tract
Rio Blanco Tract
Bishop Tract
Rindge Tract
Shima Tract
Atlas Tract
Wright Tract
Elmwood Tract
Sargent-Barnhart Tract
Acampo
Lodi Airport
Woodbridge
Lodi
Henderson Village
Lodi Airpark Airport
Kingdon Airpark Airport
Victor
Lockeford
Clements
Micke Grove Reg. Pk. & Zoo
Oak Grove Reg. Park
Stockton
Waterloo
Linden
Bellota
Peters
French Camp
Stockton Metropolitan Airport
Collegeville
Lathrop
Farmington
Mokelumne
Sacramento Joaquin
Calaveras
Mormon
Littlejohns
Duck
Dry

Attachment B

Request for Modification

PETERSON . BRUSTAD . PIVETTI . INC .
ENGINEERING AND ARCHITECTURE

May 15, 2007

State of California
Department of Water Resources
Reclamation Board
Attn: Floodway Protection Section
P.O. Box 942836
Sacramento, CA 94236

Subject: **Request for Modification to Designated Floodway Line for Property at 22221 Bender Road, Acampo, CA 95220 NE ¼ Section 21, T4N, R6E, M.D.B. & M.**

Honorable Board Members:

Dr. Steve West (the owner) proposes to construct a single family home on his 15 acre property that is bounded by East Peltier Road, North Bender Road and the right bank of the Mokelumne River near Acampo, California. The footprint of the proposed home is within the existing 100-year Designated Floodway Line according to the Reclamation Board's 1975 Designated Floodway Map for the area. The right bank of the Mokelumne River at the owner's property is an elevated, relatively flat overbank area on an un-leveed outside bend. The right overbank is higher in elevation than the levee along the left bank. In order to pursue construction, on behalf of the owner, we request a modification to the Designated Floodway Line for the subject property according to Section 106 of the Reclamation Board Regulations.

The alteration requested is represented on the attached Exhibit A, and generally consists of conforming the Reclamation Board's Designated Floodway to match FEMA's 100-year floodplain boundary on the owner's property. Less than 2,000 feet of Designated Floodway Line is requested to be modified.

The alteration requested is appropriate for the following reasons:

1. FEMA's Flood Insurance Rate Maps (FIRMs) for the Mokelumne River were last updated in 1988, 13 years after the Reclamation Board's 1975 Designated Floodway Maps were drawn.

2. FEMA's boundary is based on a 15,400 cfs peak discharge for the 100-year flood event[1] on the Mokelumne River (at Peltier Road), which is more than 80% larger than the 8,500 cfs used to draw the Reclamation Board's Designated Floodway Map. In addition, FEMAs water surface profiles and FIRMs were computed based on detailed studies while approximate methods were used for the Reclamation Board's Designated Floodway.

[1] Table 6. Summary of Discharges, p. 46, *Flood Insurance Study, San Joaquin County, California, Unincorporated Areas*, Volume 1 of 3, Revised December 16, 2005.

1180 Iron Point Rd, Suite 260, Folsom, CA 95630
916-608-2212 Fax: 916-608-2232
www.pbp-consulting.com

3. The Reclamation Board Designated Floodway does not adhere to topographic features on the property, reinforcing the notion that the boundary was drawn using approximate methods, and was not likely field verified at this particular site.

4. Topography of the owner's property, surveyed and drawn to a scale of 1"= 20', indicates the owner's proposed home site is higher in elevation than FEMA's computed 100-year flood elevation of 34.2 feet. The topographic survey, completed in 1987, shows the ground surface elevation between the proposed home site and the Mokelumne River is between 34.6 and 35.2 feet in elevation. This confirms the accuracy of the 100-year flood boundary as drawn on the FIRM.

5. The owner proposes to construct the house with the lowest finished floor of the home at elevation 38 feet NGVD, which is 0.2 feet higher than FEMA's 500-year water surface elevation of 37.8 feet and 3.8 feet higher than FEMA's 100-year water surface elevation of 34.2 feet[2]. This elevated construction would minimize potential flood damage should a 500-year flood event occur on the Mokelumne River. The home would be constructed on a raised footing, with no below-grade excavations such as a swimming pool.

Each of these items indicates the FEMA floodplain boundary is a more accurate and dependable representation of potential flooding at the owner's property. In addition, by elevating the structure, the owner would reduce his risk in constructing a home at this site. A graphic depiction of the boundaries, home site, and Mokelumne River is included on the attached Exhibit A. Photographs of the property in its existing condition are also included in Exhibit A.

We appreciate your consideration of this request for modification of the Designated Floodway Line on the owner's property.

Respectfully yours,

Dave Peterson, P.E.
Principal

cc: Steve West

[2] Flood Profiles, Figure 18P. *Flood Insurance Study, San Joaquin County, California, Unincorporated Areas*, Volume 1 of 3, Revised December 16, 2005.

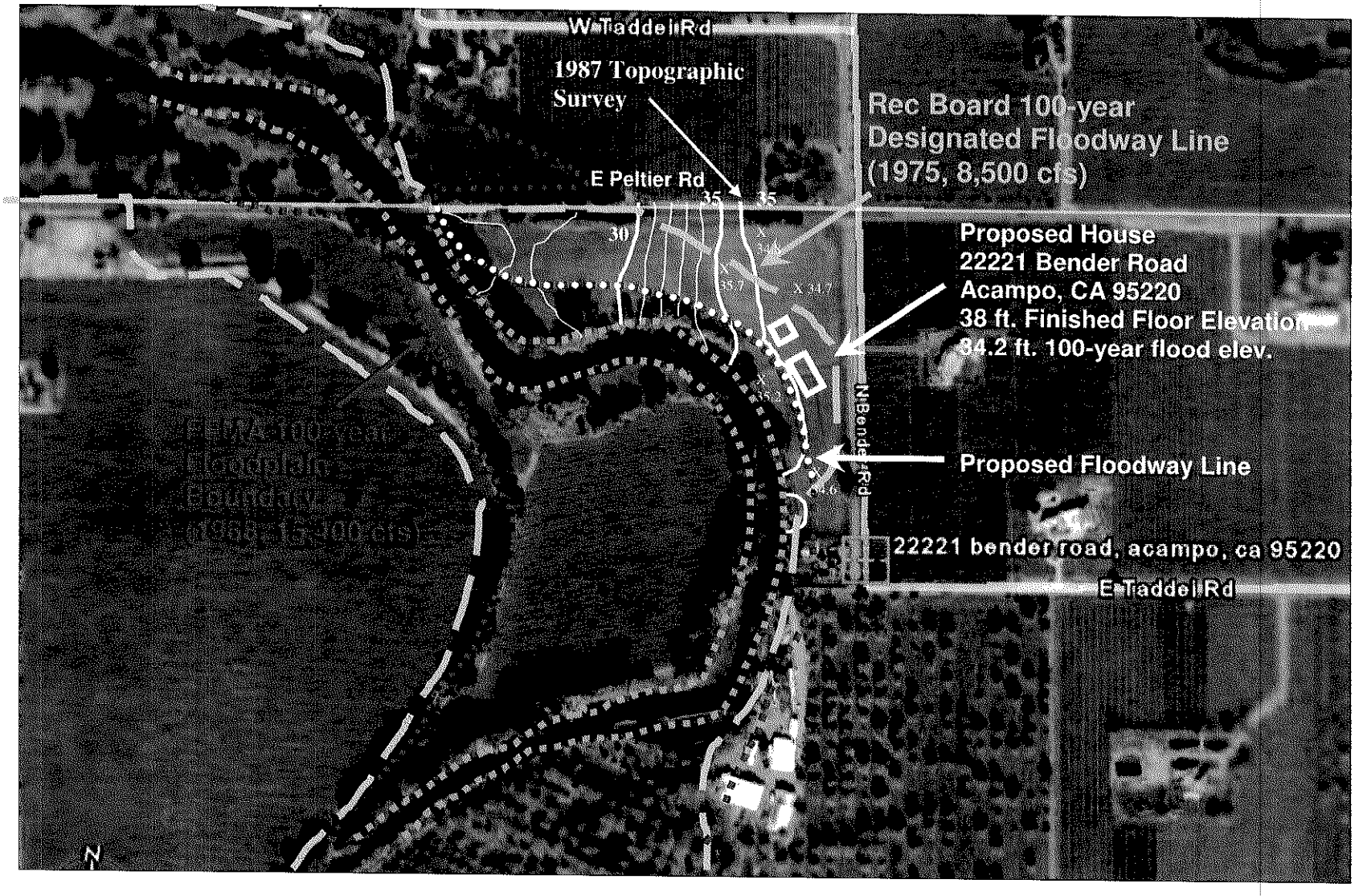


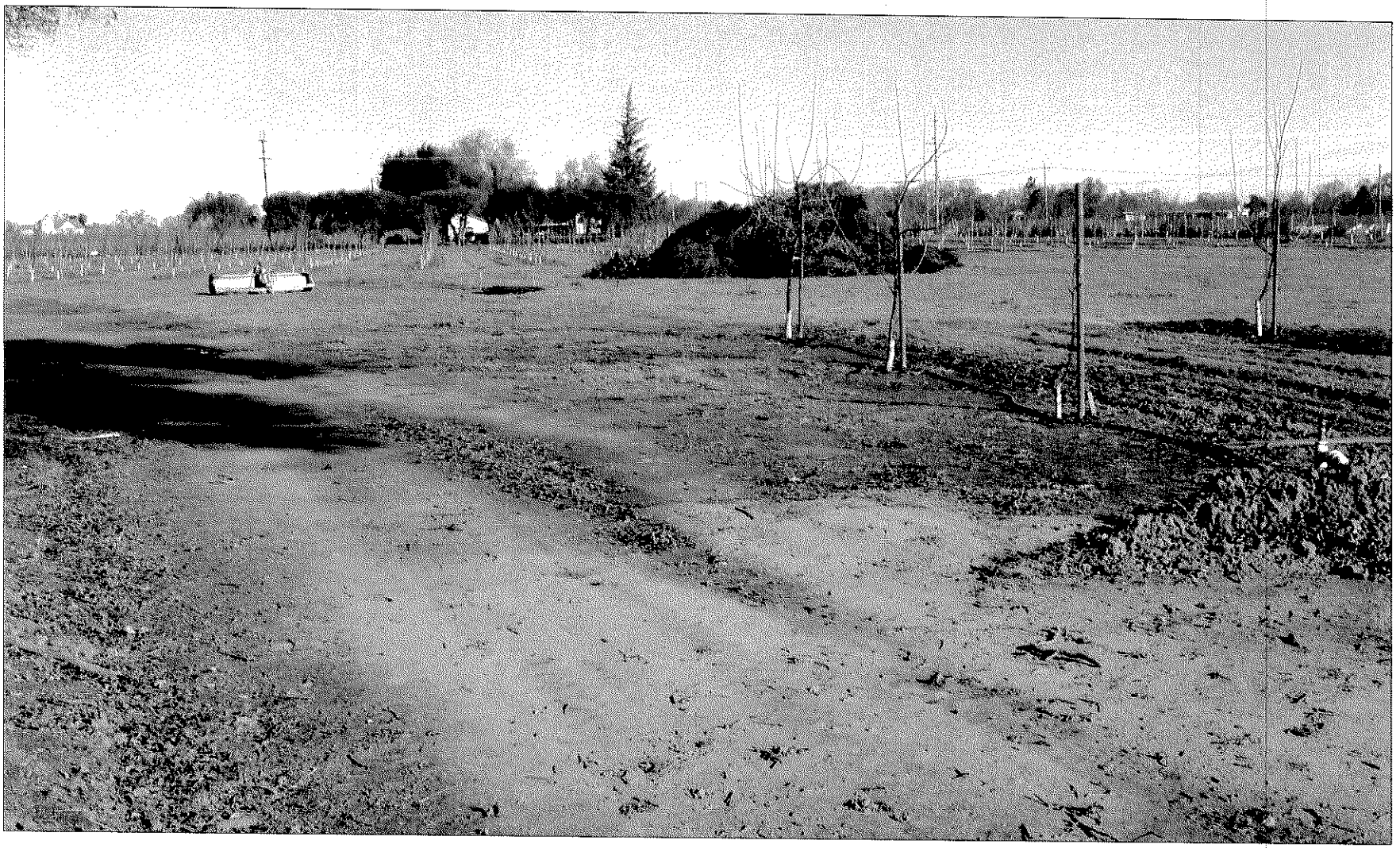
Exhibit A: Steve West, 22221 Bender Road, Acampo, CA 95220
Request for Adjustment of Designated Floodway Line

Existing Property – Facing North with N Bender Road on right hand side of photo and Mokelumne River on left hand side of photo. Proposed homesite is near pile of orchard debris near center of photo.

Exhibit A

Existing Property – Facing Northwest showing flat overbank of Mokelumne River at proposed homesite.

Exhibit A



Existing Property – Facing North from flat overbank of Mokelumne River at proposed homesite.

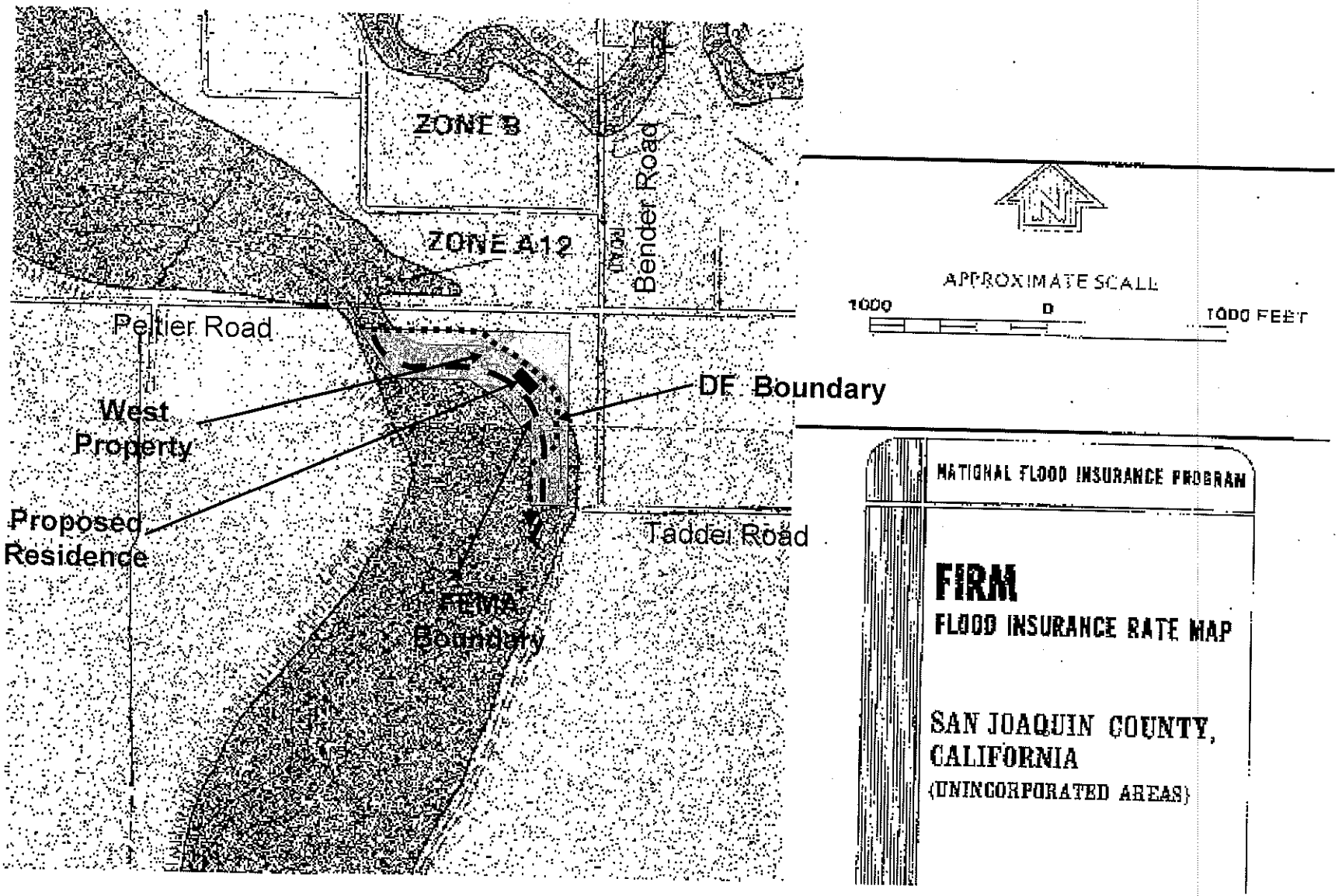
Exhibit A

Existing Property – Facing South from Peltier Rd. with Mokelumne River on right hand side of photo.

Exhibit A

Attachment C

Flood Insurance Rate Map


ZONE B
ZONE A12
Bender Road
Peltier Road
West
Property
Proposed
Residence
DF Boundary
Taddei Road
FEMA
Boundary
APPROXIMATE SCALE
1000
0
1000 FEET
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
SAN JOAQUIN COUNTY,
CALIFORNIA
(UNINCORPORATED AREAS)